AMENDMENTS TO THE CLAIMS

1. (Previously Amended) A communications system for transmitting forward and reverse signals, the communications system comprising:

a plurality of terminals for providing reverse optical signals, wherein the reverse optical signals are transmitted in an analog format;

a reverse transmitter for receiving the reverse optical signals into a single input port and for providing a combined reverse optical signal in a digital format, the reverse transmitter comprising:

a converter for converting the reverse optical signals into the digital format;

a carrier-detect circuit coupled to the converter for detecting the presence of each reverse optical signal received;

a delay circuit coupled to the converter for delaying the reverse optical signals; and

a switch coupled to the delay circuit and controlled by the carrier-detect circuit, wherein the reverse transmitter provides the combined reverse optical signal in a single wavelength only in the presence of a detected reverse optical signal.

2. (Canceled)

3. (Previously Amended) The communications system of claim 1 further comprising:

a plurality of reverse transmitters;

a digital network coupled to each of the plurality of reverse transmitters for receiving and combining the combined reverse optical signal received from each reverse transmitter;

a receiver coupled to the digital network for receiving the combined reverse optical signals, and for converting the combined reverse optical signals to analog reverse optical signals; and

a headend coupled to the receiver for receiving and processing the analog reverse optical signals,

whereby, due to a burst-mode transmission from each of the plurality of reverse transmitters, the digital network combines the combined reverse optical signals from the plurality of reverse transmitters using header identifier information.

4. (Previously Amended) The communications system of claim 3, wherein the communications system is a cable television system that may include both a digital headend and an analog headend for generating and receiving the combined reverse optical signals in both the digital and the analog formats.

5. (Previously Amended) The communications system of claim 4, wherein the communications system further includes:

a descriminator circuit coupled to the digital network for analyzing the header identifier information,

wherein dependent upon the header identifier information, the descriminator circuit provides the combined reverse optical signals in the digital format to the digital headend and provides the combined reverse optical signals in the analog format to the analog headend.

6. (Previously Amended) A communications system for transmitting and receiving optical signals over a communications medium, the communications system comprising:

subscriber equipment for transmitting reverse optical signals;

a plurality of transmitters coupled to at least one of the subscriber equipment for digitizing the reverse optical signals, wherein each of the plurality of transmitters comprising:

a carrier-detect circuit for detecting when reverse optical signals are present within the transmitter;

a delay circuit for delaying the reverse optical signals; and

a switch coupled to the delay circuit and controlled by the carrier-detect circuit,

wherein when the carrier-detect circuit detects a reverse optical signal, the carrier-detect circuit allows the reverse optical signals to be transmitted upstream through the digital network;

a digital network coupled to each of the plurality of transmitters for combining the digital reverse optical signals, wherein the combined digital reverse optical signal has a single wavelength;

a receiver coupled to the digital network for converting the digital optical signals back to the original reverse optical signals; and

a headend coupled to the receiver for processing the reverse optical signals,

wherein each of the transmitters combines the reverse optical signals received from the subscriber equipment into a combined reverse optical signal.

7. (Canceled)

8. (Previously Amended) The communications system of claim 6, wherein digitizing the reverse optical signals is accomplished with an analog-to-digital converter.

9. (Previously Amended) The communications system of claim 6, wherein each of the plurality of transmitters blocks the reverse optical signals and encapsulates the blocks into packets with associated identifier header information for identification within the headend.

10. (Original) The communications system of claim 9, wherein the communications system is a cable television system that may include both a digital headend and an analog headend.

11. (Original) The communications system of claim 10, wherein the communications system further comprises:

a descriminator circuit coupled to the digital network for analyzing the associated identifier header information,

wherein dependent upon the identifier header information, the descriminator circuit provides the packets to one of the digital headend and the analog headend.

12. (Original) The communications system of claim 6, wherein the communications medium is a hybrid fiber coaxial cable.

13. (Original) The communications system of claim 10, wherein a control system is used in connection with both the digital and the analog headends for preventing collision of the reverse signals.